

# AMERICAN RAILROAD JOURNAL, AND GENERAL ADVERTISER

FOR RAILROADS, CANALS, STEAMBOATS, MACHINERY  
AND MINES.

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[WHOLE No. 506, Vol. XX.]

Correspondents will oblige us by sending in their communications by Tuesday morning at latest.

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## AMERICAN RAILROAD JOURNAL.

PUBLISHED AT 105 CHESTNUT ST. PHILADELPHIA.

Saturday, November 20, 1847.

### To Contractors—Pennsylvania Central Railroad.

It will be seen, on referring to the advertisement of this company, that the amount of work to be let has been increased by several miles since the notice was first given—and that the day of letting has been changed from Thursday the 25th, to Friday the 26th of November. We would, therefore, ask the attention of our readers engaged in that line, to the notice of the company, which we bring forward in this number for their convenience.

**PENNSYLVANIA RAILROAD COMPANY.**  
Notice to Contractors.—Proposals will be received until FRIDAY, the 26th day of November, at 10 o'clock A. M., at the Town-Hall, in the Borough of Lewistown, for the grading and masonry upon about 40 miles of the Pennsylvania Railroad, extending west from section 20 to near Lewis-town.

Plans and specifications of the work can be seen at the above named place for five days previous to the time appointed for receiving bids.

Any further information can be had upon application to WM. B. FOSTER, Jr., Esq., Associate Engineer at Harrisburg. S. V. MERRICK, 344 President.

### Schuylkill Coal Trade.

SCHUYLKILL NAVIGATION.—Week ending November 11, 1847.

|                                 | Tons.   | cwt. |
|---------------------------------|---------|------|
| Pottsville and Port Carbon..... | 6,299   | 18   |
| Schuylkill Haven.....           | 2,312   | 08   |
| Port Clinton.....               | 00      | 00   |
| This week.....                  | 8,612   | 06   |
| Previously.....                 | 203,283 | 00   |
| Total.....                      | 211,895 | 06   |

### Mount Savage Iron Works.

These extensive iron works were sold, we perceive, at the time appointed, last week, to Messrs. Corning & Winslow of Albany, and Mr. J. M. Forbes of Boston, for \$215,000, upon the judgments of the English bond holders. This establishment, like many other pioneers in this country, commenced operations upon too large a scale at first, requiring an immense outlay of capital to be a long time out of use before returns could be realized, and probably mainly upon a borrowed, instead of a subscribed and paid-up capital.

We are not informed as to the extent of the works at this time, but understand that they have been much enlarged since our visit to them in 1843, the year they commenced making railroad iron. The outlay of capital has been more than twice, and probably three times as much as the amount of this sale, which ought to be, and will be under the management of the present proprietors—who are practical business men—an excellent investment.

We understand that operations will be recommenced at an early day; and we hope to hear that our anticipations of this establishment are yet to be fully realized.

### Central Michigan Railroad.

Receipts for October.

The Central railroad company, says the Detroit Free Press, are doing a large business on the road. The receipts for the month of October were \$60,300 96. Considering the running expenses, length of road, etc., we venture to say there is not in the United States, a road which pays as well to the stockholders.

"When this road is finished through to the lake, it will do a business that will astonish our eastern neighbors, who have until recently imagined this road an unprofitable investment. In the spring of 1846; we were in New York city, and heard an intelligent gentleman express surprise that capitalists could be found willing to invest money in a railroad 'away out west,' and assert that the country could not give support enough to the road to pay interest on the investment. We were appealed to, to know how much the daily or monthly receipts were, and remarked that the road had done a business of \$30,000 per month, and that one year would see it doing a business of \$50,000 per month. This was not believed. Now, we see the road doing a \$60,000 business per month, or \$2,000 per day, and this too during late navigation, when every upper lake boat

is running opposition to the road. 'This is a great country,' and is constantly growing."

### Northern N. H. Railroad.

"We understand," says the Boston Atlas of the 13th, "that this railroad will be opened entirely (with the exception of a short piece from Lebanon village to the Connecticut river, which it is unnecessary to run, until the roads in Vermont are complete) to the public, on Wednesday, the 17th instant. On that day, the stockholders, with invited guests, will pass over the road, leaving Boston in a special train at 7 A. M., and returning the next day—dining together, by invitation of the citizens of Lebanon and vicinity, on the 17th. Among the invited guests who have consented to be present, we learn, are the Hon. DANIEL WEBSTER, Hon. JOSEPH QUINCY, Jr., Hon. CHARLES H. WARREN, Hon. JOSEPH BELL, and numerous others. We understand a grand gathering is anticipated at Lebanon, to celebrate the completion of this enterprise, connecting by railroad the valleys of the Connecticut and Merrimac—and, for the first time, opening railroad facilities to the Vermont state line."

This line of road now extends from Boston to Lowell, thence up the manufacturing valley of the Merrimac, through Manchester, Nashua, Concord and Franklin, where it leaves the valley, and crosses over the intervening heights, at a moderate grade, to the valleys of the Blackwater and Smith's rivers, and thence follows the Mascota river down to the Connecticut, where intersecting roads connect with it, and extend in one direction up the valley of the Connecticut and Passumpsic rivers, to Stanstead and Montreal; and, in the other, through Central Vermont, to Burlington, St. John's and Montreal, and to Pittsburg and the Saint Lawrence, at Ogdensburg.

The distance from Boston to Connecticut river, by this line, is 143 miles, which is now to be opened to the public. Of this, the Northern road makes about 69; and the Concord, Nashua and Lowell, and Boston and Lowell, 73 miles.

Forty-four miles of this road have been run, namely, from Concord, to Grasson, since Sept. 1st, and the receipts upon it have been large. The gross receipts for freight alone, for last month, exceeded \$4000 per week. The remaining twenty-five miles are now to be added, and the receipts will be greatly increased. The passenger receipts have also been large—equalling, if not exceeding, expectation.



These facts seem fully to justify the standing the stock of this road has always maintained in our share market; and we confidently hope its stockholders may realize all they indicate.

There has been uncommon energy, and good management in the construction of this road; and those who have invested their capital in it will be sure to derive ample returns, as it will unquestionably prove one of the most profitable roads in New England.—[Ed. R. R. J.]

#### Railroad and Canal Stocks.

Reported sales in Boston, New York and Philadelphia, November 6th, 1857.

| ROAD.                   | Par. val. | Off. Asked. | Dividend.              |
|-------------------------|-----------|-------------|------------------------|
| Auburn and Rochester.   | 100.      | 101.        | 103.                   |
| Boston and Lowell.      | 500.      | 603.        | 608.                   |
| Boston and Maine.       | 100.      | 116.        | 116.                   |
| Boston and Providence.  | 100.      | 101.        | 101.                   |
| Boston and Worcester.   | 100.      | 120.        | 121.                   |
| Charlestown Branch.     | 100.      | 17.         |                        |
| Concord.                | 50.       | 65.         |                        |
| Cheshire.               | 100.      | 91.         | 92.                    |
| Connecticut River.      | 100.      | 96.         | 101.                   |
| Ct. River & Champ.      | 100.      | 90.         |                        |
| Eastern.                | 100.      | 110.        | 110.                   |
| Eastern, N.H.           | 100.      | 110.        |                        |
| Fall River.             | 100.      | 90.         | 91.                    |
| Fitchburg.              | 100.      | 125.        | 129.                   |
| Long Island.            | 50.       | 14.         |                        |
| Old Colony.             | 100.      | 90.         | 100.                   |
| Nashua and Lowell.      | 100.      | 125.        |                        |
| N. Bedford & Taunton.   | 100.      | 125.        |                        |
| Norwich and Worcester.  | 100.      | 374.        | 374.                   |
| Northern.               | 100.      | 103.        | 103.                   |
| Phila. Wilm. and Balt.  | 50.       | 31.         |                        |
| Portland, Saco & Ports. | 100.      | 100.        |                        |
| Reading.                | 50.       | 27.         | 27.                    |
| Stonington.             | 100.      | 50.         |                        |
| Taunton Branch.         | 100.      | 112.        |                        |
| Troy and Greenbush.     | 100.      | 43.         | 46.                    |
| Vermont Central.        | 100.      | 89.         |                        |
| Vermont and Mass.       | 100.      | 75.         |                        |
| Western.                | 100.      | 113.        | 113.                   |
| New York, Nov. 6th.     |           |             |                        |
| Erie, new stock.        | 100.      | 80.         | 83.                    |
| do. old stock.          | 100.      | 614.        | 62.                    |
| Mohawk.                 | 100.      | 68.         |                        |
| Harlem.                 | 100.      | 44.         |                        |
| Reading.                | 50.       | 28.         | 28.                    |
| Utica and Schenectady.  | 50.       | 117.        | 117.                   |
| Syracuse and Utica.     | 100.      | 110.        | 117.                   |
| Auburn and Syracuse.    | 100.      | 100.        |                        |
| Western.                | 100.      | 100.        |                        |
| Long Island.            | 50.       | 28.         | 28.                    |
| Auburn and Rochester.   | 100.      | 100.        |                        |
| N.J. road & Trans. co.  | 100.      | 104.        | 105.                   |
| Paterson.               | 100.      | 55.         | 56.                    |
| Prov. and Stonington.   | 100.      | 38.         | 38.                    |
| Norwich and Worcester.  | 100.      | 100.        | 101.                   |
| N. Haven and Hartford.  | 100.      | 100.        |                        |
| Hudson and Berkshire.   | 100.      |             |                        |
| Housatonic.             | 100.      | 37.         |                        |
| do. new stock.          | 100.      | 96.         |                        |
| Tonawanda.              | 100.      | 46.         |                        |
| Macon.                  | 100.      | 71.         |                        |
| Hudson River.           | 100.      | 145.        | 150 div. Jy 6 p.c.     |
| Camden and Amboy.       | 100.      | 100.        | 100 in. 1 M. & S.      |
| do. 6 per cts.          | 100.      | 125.        | 145 div. Jy 5 p.c.     |
| Phila. and Trenton.     | 100.      | 28.         | 30 No div.             |
| Phila. Wilm. and Balt.  | 100.      | 84.         | 85 in. 1 Jy & D.       |
| do. loans 6's 1860.     | 100.      | 87.         | 87 1/2 F & A.          |
| do. do. 1858.           | 100.      | 27.         | 27 div. in. 1 Jy & Jy. |
| Reading.                | 50.       | 69.         | 69 in. 1 Jy & Jy.      |
| do. 1850.               | 100.      | 72.         | 72 div. Jy 5 p.c.      |
| Minehill.               | 100.      | 38.         | 30 Aug. no div.        |
| Schenck Navigation.     | 100.      | 68.         | 69 1 Mar. Jy 5 p.c.    |
| do. 6 per cts.          | 100.      | 60.         | 63 December.           |
| do. do. 5's 1855-56.    | 100.      | 28.         | 30 July no div.        |
| Lehigh coal and navig.  | 50.       | 65.         | 67 in. 1 Jy & Jy.      |
| do. loan 6's 44 to '53. | 100.      | 90.         | 90 1/2 ann. cash.      |
| do. mortgage 6's 1857.  | 100.      | 70.         | 80 no div.             |
| Chesa. and Dela. canal. | 100.      | 78.         | 79 Jy 4 p.c.           |
| do. 6's 1856.           | 100.      | 140.        | 150 in. Jy & Jy.       |
| do. Randal loan.        | 100.      |             |                        |

#### Railroad Rates--Comparative Rates in the United States.

The comparative rates of fare on railroads is a subject of some interest, we have therefore prepared the following tabular statement of the principal railroads in the United States, giving their length, through fare, and rate per mile, from which it will be seen that the New York and Erie railroad charges the lowest rate, viz. 1 1/2 cents per mile—the Harlem next, and then the Long Island railroad. The New England roads all range below three cents, except the New Haven, Hartford and Springfield, which is one-tenth over. And the next lowest, after the New England roads, is the Weldon and Wilmington, N. C., which is a fraction less than 2 1/2 cents—quite too low for a country so thinly populated—though high enough for many of the more northern lines.

From this statement it will be seen that the railroads in the State of New York, diverging from the city of New York, charge lower rates than any other roads in the country; and we presume the managers of those roads have been influenced by the belief that, where there is a dense, and to a certain extent confined population, the true plan is to put the rates of fare low, and thus induce the masses to use the road. This we are fully convinced is the true policy, and we believe it will ultimately prevail.

| NAME.                                   | Commencement & termination.  | Length.    | Through fare. | Cents.        |
|---|------------------------------|------------|---------------|---------------|
| Eastern railroad.                       | Boston to Portland.          | 105 miles. | \$3 00        | per mile 2.85 |
| Boston and Maine.                       | " "                          | 110 "      | 3 00          | " 2.72        |
| " Lowell.                               | " Lowell.                    | 26 "       | 0 65          | " 2.5         |
| " Worcester.                            | " Worcester.                 | 44 "       | 1 25          | " 2.8         |
| " Providence.                           | " Providence.                | 42 "       | 1 25          | " 2.97        |
| Fitchburg.                              | " Baldwinsville.             | 71 "       | 1 75          | " 2.46        |
| Fall River.                             | " Fall River.                | 53 "       | 1 35          | " 2.54        |
| Old Colony.                             | " Plymouth.                  | 37 1/2 "   | 1 00          | " 2.66        |
| Western.                                | Worcester to Albany.         | 156 "      | 3 75          | " 2.37        |
| Nashua and Lowell.                      | Lowell and Nashua.           | 15 "       | 0 40          | " 2.66        |
| Concord.                                | Nashua to Concord.           | 34 "       | 0 80          | " 2.35        |
| Norwich and Worcester.                  | " "                          | 60 "       | 1 50          | " 2.5         |
| New Haven and Springfield.              | " "                          | 62 "       | 1 87          | " 3.00        |
| Bridgeport.                             | " "                          | 98 "       | 2 00          | " 2.04        |
| New York and Harlem.                    | " "                          | 53 "       | 1 00          | " 1.88        |
| New York and Erie.                      | " "                          | 87 "       | 1 50          | " 1.72        |
| Long Island.                            | " "                          | 95 "       | 2 00          | " 2.1         |
| Camden and Amboy.                       | New York to Philadelphia.    | 90 "       | 3 00          | " 3.33        |
| New York and New Brunswick.             | " "                          | 33 "       | 0 75          | " 2.27        |
| Philadelphia.                           | " "                          | 88 "       | 4 00          | " 4.54        |
| Reading.                                | Philadelphia and Pottsville. | 92 "       | 3 00          | " 3.26        |
| Philadelphia and Baltimore.             | " "                          | 97 "       | 3 00          | " 3.01        |
| Westchester and Columbia.               | " "                          | 32 "       | 0 75          | " 2.34        |
| Philadelphia, Lancaster and Harrisburg. | " "                          | 107 "      | 4 00          | " 3.73        |
| " Germantown and Norristown.            | " "                          | 17 "       | 0 40          | " 2.38        |
| Harrisburg and Chambersburg.            | " "                          | 56 "       | 2 12          | " 3.78        |
| Baltimore and Ohio.                     | Baltimore to Cumberland.     | 179 "      | 7 00          | " 3.91        |
| Washington.                             | " "                          | 40 "       | 1 60          | " 4.00        |
| Susquehanna.                            | " "                          | 71 "       | 2 13          | " 3.00        |
| Washington and Richmond.                | (including Portage)          | 133 "      | 5 50          | " 4.13        |
| Louisiana.                              | Gordonsville.                | 59 "       | 3 25          | " 5.5         |
| Richmond to Petersburg.                 | " "                          | 22 1/2 "   | 1 00          | " 4.34        |
| Winchester and Potomac.                 | " "                          | 39 "       | 2 00          | " 5.12        |
| Petersburg and Roanoke, to Weldon.      | Weldon.                      | 63 "       | 3 00          | " 4.76        |
| Weldon to Wilmington.                   | " "                          | 16 1/2 "   | 4 00          | " 2.48        |
| Wilmington to Charleston by steamboat.  | " "                          | 87 "       | 4 00          | " 4.6         |
| Gaston and Raleigh.                     | " "                          | 87 "       | 4 00          | " 4.6         |
| South Carolina.                         | Charleston to Augusta.       | 136 "      | 6 75          | " 4.96        |
| Columbia.                               | Branchville to Columbia.     | 68 "       | 3 38          | " 4.97        |
| Georgia.                                | Augusta to Atlanta.          | 171 "      | 7 00          | " 4.09        |
| Athens branch.                          | " "                          | 39 "       | 1 95          | " 5.00        |
| Western and Atlantic.                   | Dalton.                      | 100 "      | 5 00          | " 5.00        |
| Central.                                | Savannah to Macon.           | 191 "      | 7 00          | " 3.65        |
| Macon and Western.                      | Atlanta.                     | 101 "      | 4 00          | " 3.96        |
| Montgomery and West Point.              | " "                          | 60 "       | 3 00          | " 5.00        |
| Vicksburg and Jackson.                  | " "                          | 47 1/2 "   | 3 00          | " 6.38        |
| Albany and Schenectady.                 | " "                          | 17 "       | 0 50          | " 2.94        |
| Greenbush and Troy.                     | " "                          | 16 "       | 0 20          | " 3.33        |
| Troy and Schenectady.                   | " "                          | 20 1/2 "   | 0 50          | " 2.43        |
| Utica and Schenectady.                  | " "                          | 78 "       | 3 00          | " 3.84        |
| Utica and Syracuse.                     | " "                          | 53 "       | 2 00          | " 3.77        |
| Syracuse and Auburn.                    | " "                          | 26 "       | 1 00          | " 3.84        |
| Auburn and Rochester.                   | " "                          | 77 "       | 3 00          | " 3.89        |
| Rochester and Attica.                   | " "                          | 44 "       | 1 56          | " 3.54        |
| Attica and Buffalo.                     | " "                          | 31 1/2 "   | 0 94          | " 2.98        |
| Buffalo and Niagara Falls.              | " "                          | 23 "       | 0 75          | " 3.4         |
| Lockport and Niagara Falls.             | " "                          | 24 "       | 0 75          | " 3.12        |
| Michigan Central.                       | Detroit to Kalamazoo.        | 148 "      | 4 40          | " 3.00        |
| Detroit and Pontiac.                    | " "                          | 25 "       | 1 00          | " 4.00        |
| Erie and Kalamazoo.                     | Toledo to Adrian.            | 33 "       | 1 00          | " 3.00        |
| Southern Michigan.                      | Monroe to Hillsdale.         | 70 "       | 2 00          | " 2.85        |
| Mad River.                              | Sandusky to Bellefontaine.   | 109 "      | 3 25          | " 3.18        |
| Little Miami.                           | Cincinnati to Springfield.   | 94 "       | 2 00          | " 2.38        |
| Lexington and Ohio.                     | " "                          | 28 "       | 1 25          | " 4.46        |
| Mansfield and Sandusky.                 | " "                          | 56 "       | 1 50          | " 2.67        |
| Madison and Indianapolis.               | " "                          | 86 "       | 3 00          | " 3.48        |

#### Chesapeake and Ohio Canal.

The Williamsport (Md.) Times of Friday says: "We learn from reliable sources that the Chesapeake and Ohio canal will be in good navigable order by the latter part of next week, and that by that time a large and active transportation of flour and other produce will be commenced."



### Expenses of Railway Construction in England.

We should have had few railways in this country at such a cost.

#### Parliamentary Expenses.

London and Birmingham and London and South Western..... £650  
Great Western and Manchester and Leeds..... 1,000  
London and Brighton..... 3,000

#### Law Charges—Engineering—Direction.

London and South-Western..... 900  
Grand Junction..... 1,200  
Birmingham..... 1,500  
Manchester and Leeds..... 1,600  
Brighton..... 1,800  
Great Western..... 2,500

#### Land and Compensation.

Newcastle and Carlisle..... 3,200  
Grand Junction..... 3,000  
South-Western..... 4,000  
Manchester and Leeds..... 6,150  
Birmingham and Great Western..... 6,300  
Brighton..... 8,000

#### Railway Works and Stations.

Newcastle and Carlisle..... 12,000  
Grand Junction..... 15,000  
South-Western..... 18,450  
Birmingham..... 22,250  
Great Western..... 40,000  
Manchester and Leeds..... 41,400

#### Carrying Establishment.

Newcastle and Carlisle..... 11,300  
Grand Junction..... 2,000  
South-Western..... 2,350  
Birmingham and Brighton..... 3,000  
Manchester and Leeds..... 3,600  
Great Western..... 4,800

In the case of the continental railways, the first three classes of expenses have not been so great. The "law charges," etc., on the Belgian, were £430 a mile; on the Paris and Rouen, £800. The "land and compensation," Paris and Rouen, £2300; Belgian, £2750. In "railway works and stations," Belgian, £10,600 per mile; Paris and Rouen, £17,000. In the "carrying establishments," Belgian, £2450; and Paris and Rouen, £2400 per mile.—*The Rail, its Origin and Prospects.*

#### Great Western Canada Railroad.

On Saturday, the 23d of October, this company broke ground, with appropriate ceremony, at London. There appears to have been much enthusiasm manifested by the people of that district—and the day was made a day of rejoicing and amusement.

The charter for this road was obtained about ten years ago. The government appropriated £200,000 in aid of the work, but from the general depression in the business operations of 1838 and 1839, with other difficulties of a local character, prevented the commencement of the work. It was considered a work of too great importance, however, to remain long neglected, and another effort was made in 1844 and 1845 to get the stock taken in England, which was thought for a time to be entirely successful; but, to use the language of the president of the company, Sir Allan McNab, "scarcely was the arrangement effected when the railroad panic broke out in England, and the stockholders were in consequence unable to fulfill their engagements. They had, however, he was happy to say, £250,000 of stock held in England, by good constituents—men who are able and willing to pay, and who have paid five per cent. or £12,500 on their shares." Yet, notwithstanding all the difficulties and the delays which have taken place, he said, "in conclusion, he would assure them that, come what may, it was a positive certainty that the road would be built, and that, too, with very little delay. No government could stand which

would not support this railway, and he had no hesitation in saying they must support it."

After years of delay and years of effort, and of preliminary surveys, the surveys for a definite location were commenced early last spring, under the direction of CHARLES B. STUART, Esq., one of the most persevering and efficient engineers of the United States, aided by several other young men of the profession from the States, and pursued with a vigor—and we think we may say a success, rarely equaled, as they examined and "carefully surveyed nearly fifteen hundred miles" of line—and located definitely, including the branch to Sarnia, 277½ miles, of which 264 miles are straight lines—as may be seen in Mr. Stuart's report, published, with a very valuable map, showing the line and all its important connections, both east and west, as well as in Canada, in the Journal of September 18th, or No. 38. Since the surveys were completed, one hundred and ninety-two miles, extending from Niagara river to Hamilton, thence to London and thence to Port Sarnia on the St. Clair river, have been put under contract; considerably, as we understand, within the estimate of the engineer; and now we perceive that the work has been formally commenced, and under auspices, we trust, which will ensure its rapid construction, as we are quite sure that it will prove to be one of the best investments of capital in the country. In the course of the proceedings, Gen. S. Tiffany, Esq., chairman of the directors, addressed the meeting, explanatory of the great and peculiar advantages of this road, not only as a local work, but as the great and direct connecting link between the roads of Michigan, Indiana and Illinois to the Mississippi and Ohio rivers, and those of New York and New England. The remarks of Mr. Tiffany are so appropriate that we give the following extracts from them, as published in the Toronto Globe of 27th October, and refer our readers to the map accompanying Mr. Stuart's report in No. 38 of the Journal, from which they will better understand the subject, and appreciate the importance of this line.

Mr. Tiffany said "he was called on to speak of the tendency which the Great Western road would have in promoting friendly relations between this province and the United States, and he believed there was no one present who did not feel the vast importance to both countries, to cultivate and maintain mutual good will. Through the means of the great and increasing commercial interest between this province and the United States—which he hoped would soon open out our trade in all agricultural products, through the facilities which our canals and railroads will afford—we feel no doubt that both interest and the inclination of the people of both countries, will be to strengthen the bond of good feeling, and will effectually prevent the growth of those prejudices and animosities which so often have arisen among people living under different governments. The Great Western was so located as not only to perform the office of forwarding the commercial communications between this province and the United States; but it is calculated by its position to afford the best route of communication between the eastern and western States. It is the necessary intermediate and connecting link between the chain of railroad from Boston to Niagara river, and the railroad from Detroit to Lake Michigan, to be continued thence round the head of the lake to Chicago and the Mississippi river. A glance at the geographical position of this province and the adjoining States, will convince any one of the advantages possessed by the Great Western, in commanding a large portion of the business and travelling between those countries."

He then alluded to the astonishing growth and extent of the business now done on Lake Erie.

Viewing the road, therefore, as so necessary to the people of the United States, he thought it would

be productive of happy effects in showing to neither good will. This had indeed been manifested by the Americans having taken largely in the capital stock of the company. He then alluded to the vast benefits the road would confer on the province, by showing that its route had been wanted from the Niagara to the Detroit rivers, in nearly a direct line, through the oldest and best settled portion of the province, passing through or near all its important towns, thus not disturbing the business of the country, but adding greatly to its facilities, and increasing the size of the towns, and adding much to the value of real estate. Main roads now radiate from the town of London, penetrating in all directions the rich agricultural country which surrounds it. It will soon become the chief mart for the sale of produce, and the depot of merchandise for the supply of the interior; it will soon grow up into a large city.

"The value of the road to the farmer, would be incalculable. By it he will be able to avail himself of the best markets throughout the year, not only for the sale of wheat—the great staple—but for the innumerable other articles of agricultural produce which now, for the want of cheap and rapid means of transportation, are comparatively valueless to him. He drew their attention to the events of the past year when, through the want of such a line of road wheat and flour was locked up for a long time at a great loss to the owners, and that at the present moment wheat brought 1s. 3d. per bushel more at Buffalo than at Hamilton. The construction of the Great Western will correct this evil, and place the Canadian farmers on an equal footing with the farmers of western New York. These were strong motives why every man should, according to his ability, aid in building the road, but whatever the public may do in this respect, they might rely on the directors doing their duty, and he expressed his perfect confidence that the road would soon be completed. He then said that the directors had never regarded this road solely as a western measure, but that they had, as long ago as 1838, in their published report, recommended the extension of it to Montreal and Quebec, and from thence to Halifax and St. Andrews. He regretted that government had not seen fit to take up this whole great project, and construct it at the public cost, with the view of promoting the prosperity of the country, and apply its surplus profits hereafter to the support of the general expenses of the government, and thus relieve the people from taxation, or in the construction of other lines to intersect the main trunk.

"He expressed his belief founded on analogy, that the Great Western would pay dividends of 16 per cent. the first year after its completion, and that the line from Hamilton to Quebec would pay 6 per cent. In furtherance of this plan, the directors had procured a line from Hamilton to Montreal, to be chartered the session before last.

"In England and the United States the people had felt the want of a general system of railroads.

"Their roads had been constructed without such a plan by piece-meal, and to meet mere local wants.

"In this country we had, as yet, no railroads; if we except that between Laprairie and St. John's. For more than 17 years they have been constructing to a great extent in other countries, while we have looked on at a distance; but we have the advantage of the experience of those to guide us, and if we will be but taught by such experience, we may in the end have no reason to regret the delay of making railroads here. We can hardly expect that private capital and enterprise can be found, sufficient to carry out so large a system for many years; and therefore he hoped that while there was yet time, government would, with an enlightened and bold policy, take the matter up.

"He concluded by expressing his gratified surprise at the immense, and highly respectable assemblage of the people on that occasion, and could not but regard it as a hopeful indication of the awakened and deep interest the people feel in the construction of the road."

Charles B. Stuart, Esq., chief engineer of the company, was then introduced to the audience, and he proceeded to give a brief sketch of the progress of the work, and the favorable adaptation of the country for the construction of a railroad. He dwelt at some length likewise, on "the great advan-



tage which this line would be to Canada, and showed the certainty of a large portion of the passenger and freight transport trade of the great western territories being diverted through it. Mr. Stuart wound up by an energetic appeal to the people of Canada to put their shoulders manfully to the wheel, and the work will soon be carried through.

A public dinner was given by the citizens of London, at the Western Hotel, at which about 120 gentlemen were seated. After toasting her most gracious Majesty—Prince Albert and the royal family—and the Governor General of Canada, which were of course drunk with all the honors and many cheers—the president then rose and said in this great improvement which they sought to effect in Canada, several enterprising Americans were associated; many of the stockholders and some of the guests of the evening were natives of the United States; the proposed railroad, it was expected, would be largely supported by our neighbors; the commercial affinity of Canada and the States was every day becoming closer—and he thought all present would feel on such an occasion, it was a proper compliment to their friends from the other side, to do honor to their chief magistrate. He gave the *President of the United States*. The toast was drunk with all the honors.

Mr. Stuart replied. He said he had almost forgotten that he was a native of the United States. He had been but six months in the country, but he had been treated like one at home, and he had felt as if at home, and why should it not be so? They were all living for the same purpose—all were striving for the same end. It was the pride of the United States to follow the example of old England (cheers). Where did they first learn the art of making railroads? We were indebted to England for it—there the first iron road was built. And were they not on that very occasion to unite the two countries more closely together, to band them together by bands of iron? The people of the United States were desirous of cultivating an enduring social friendship with the people of Canada—and no part of the country more so than the Empire State of New York. An American in Canada could hardly realize, now, that the countries were separated—but when the iron bridge spans the mighty Niagara, and we sweep in crowds over your railroad, we will forget that we are foreigners. And when Canadians shall visit our side of the lines, we shall hold out to them the right hand of fellowship—and nowhere will they receive a heartier welcome than in the Empire State. I thank you, Mr. President and gentlemen, concluded Mr. Stuart, for the toast you have received so cordially, and believe me that, when you come to our side of the lines, we will give as hearty cheers for your Queen as you have given for our President. (loud cheers.)

There were many good things said and songs sung, but nothing perhaps occurred which excited more amusement than the following short reply of the venerable Col. TALBOT, when his health was drunk.

The chairman said, after a warm eulogy upon the character of that gentleman—that, in Colonel Talbot's presence he would refrain from saying more, and he knew that eulogy was not required to call forth a hearty response to "the health of the Hon. Thomas Talbot."

"Loud and long continued cheering greeted this toast, and Mr. Coote Stanley sang, in good style—  
The Fine Old English Gentleman."

Col. Talbot then rose and said, I thank you gentlemen most gratefully for the honor you have done

me this day. I have witnessed a scene which I never hoped to behold in this settlement—it is an event never to be forgotten. I believe I am the oldest inhabitant. I slept on this spot 55 years ago, when my best friend was a porcupine. We were often excessively hungry in those days, but we all used to declare that we never were so hungry as the night we ate the porcupine. (Cheers and laughter.) What a change has occurred since then! Now I see different beings around me—no porcupine—no bristles—but in their place a company of half-civilized gentlemen. (Laughter and cheers.) I wish you gentlemen, all prosperity, and when I am laid under the sod, may you go on progressing under the blessing of God. (cheers.)

To a complimentary toast to the engineers, Mr. Stuart acknowledged his obligations to Mr. Spaulding and his other assistants, to which Mr. Spaulding briefly replied, and gave—*The Ladies*, which was enthusiastically received; and the party immediately afterwards broke up.

The demonstration from first to last, went off admirably; and we trust it is a happy presage of the success awaiting the enterprise.

#### Gauge, or Width of Track for Railroads.

There has been much written and said upon the width of track for railroads. The early views of engineers, and others, in relation to the width of track for railroads, were probably no nearer correct under the present state of things, than were those in relation to the weight of rail and weight of engine; yet, unfortunately, the width of track cannot be as easily varied as the weight of engine, or rail, and therefore it is that a deviation from the ordinary rule, or practice of a country, or particular section of country, usually causes a warm contest between the advocates of the different gauges. Such has been the result in England, more especially, since the contest between the Great Western, with Mr. Brunel—who likes to lead—at its head; and the other principal lines in the kingdom.

Of the superiority of a track wider than 4 feet 8½ inches, we have not a doubt; but whether it should be 5 feet, 5 feet 6 inches, 6 feet, or seven feet—the width of the "Great Western"—we do not presume to decide; but that it would have been much better in the end, if a wider gauge had been at first adopted, we think there cannot be a doubt. It has however been, by many able men, deemed doubtful whether true policy, now, after so many roads have been built, and so large an expenditure has been made, dictates a change of gauge. There are circumstances, we are quite satisfied, where a different gauge may be adopted by a company, and perhaps there is no line where it can be, with more propriety adopted than from Portland to Montreal, for the reason that it passes through a country, and opens a communication, where the freight to be transported is likely to be of a bulky character; and also because it is to be the pioneer road for the entire region of country lying east and northward of it; and because it will be as easy for all roads constructed beyond it, which may be in any way connected with it, to adopt its gauge as any other.

Such appears to have been the opinion of the engineer, Mr. A. C. Morton, who has put his views at length in the shape of a report, to the directors of the St. Lawrence and Atlantic, or the Canada portion of the road, which we propose to give in part or in whole to our readers, as we may find room for it.

From this report, as well as from other sources, it will be seen that we now have a variety of gauges in this country—though principally of 4 feet 8½ in., or 4 feet 9 in. The roads in New Jersey, Ohio and

Mississippi, Mr. Morton says, are 4 feet 10 inches. The roads in South Carolina, Georgia and Florida, are 5 feet. The Louisiana roads are 5 feet 6 inches. While the New York and Erie road alone in this country is 6 feet. It is not therefore breaking a rule to deviate from what is, by many supposed to be, a uniform custom, and under the circumstances, where it cannot throw serious obstructions in the way of business, nor interfere with roads now in use, we are quite content with the decision of those interested in the Portland and Montreal road, and commend the arguments of Mr. Morton to the attention of the readers of the Journal; and the profession generally.

#### Report on the Gauge for the St. Lawrence & Atlantic Railroad. By A. C. Morton, Esq., Chief Engineer.

ENGINEER DEPARTMENT, MONTREAL,  
September 20th, 1847.

HON. A. N. MORTON, President  
St. Lawrence and Atlantic Railroad Co.

SIR: The Act to amend the Act incorporating the St. Lawrence and Atlantic railroad company, passed at the late session of the provincial parliament, 10th and 11th Victoria, Cap. 65, provides,

"That the gauge upon which the said rail shall be constructed, and which shall be used in the said railway, shall be four feet eight and one-half inches, unless, within six calendar months, the governor of this province in council, determine upon any different gauge, and that, upon communication to the said company of any order in council, establishing any different gauge, the gauge so established shall be the one used in the said road as if the same had been established in and by this act."

The charter of your road contemplates a connection at the boundary line with another road belonging to an American corporation, the two forming a perfect line to the Atlantic coast.

It therefore became necessary in the early stage of these roads that the subject of the gauge should be jointly considered by the two corporations.

After a careful consideration of the question by a convention of directors from each corporation, articles of agreement were entered into relative to the general plan of construction, etc., dated April 17th, 1846, in which among other things it is provided (article 5th) "that the gauge shall be that of 5 feet 6 inches in the clear between the rails."

As this gauge differs from that embraced in the recent act of parliament, it is proper that I should state the reasons which influenced me in recommending its adoption for your road.

The question of the best gauge for railways has, within a few years, been much discussed, and it is a subject upon which much difference of opinion prevails. The agitation of this question did not, however, take place until railway improvements were far advanced, involving a vast expenditure of money; and it is not surprising that, under these circumstances, there should be a difference of opinion as to the propriety and expediency of a change.

In an abstract view of the subject, I believe engineers generally consider that a



wider gauge than the prevailing one is desirable, to meet the requirements of the present advanced state of railway improvement.

With our present knowledge of railways, were a new system to be commenced free from interest and the prejudices of engineers, committed to a particular width, there can be little doubt but that a different gauge from that of four feet eight and a half inches would be adopted.

This gauge had its origin from no scientific investigation of the subject but from mere accident, it having been in use at a very early date on tram roads, upon which the ordinary wagons of the country ran.

From these it was copied by several coal roads, and afterwards for the Stockton and Darlington, and Liverpool and Manchester railways, which were the first constructed for passengers and general traffic.

This gauge having been adopted for the first important road in England, was copied or extended by branches or other lines without any investigation of its merits till several hundred miles were built.

In the United States the same gauge was usually adopted, and not without very good reason, for it was supposed that the experience already obtained in England, from having first introduced railways generally on this gauge, was sufficient evidence of its possessing all the requisite advantages.

As the first locomotive engines used in the United States were imported from England, it was doubtless considered advisable, both as regards economy and convenience, that they should conform to those already in use in that country, and this may have been a strong reason for adhering to the same gauge.

The Great Western road in England was, I believe, the first constructed on what is now termed the broad gauge, although an increased width of track had previously been proposed in the United States, and in a few instances adopted.

The South Carolina road, which is 136 miles in length, and was completed in 1833, has a gauge of five feet.

The propriety of an increased width of track was laid before two or three railroad companies, in the State of New York in 1834 and 1836, one of which adopted a width of track of six feet for its road, which extends from New York to Lake Erie, a distance of 450 miles.

There are 63 miles of this road in operation, and the construction of a large portion of the remaining distance is rapidly progressing.

Nearly all the remaining roads in New York have a gauge of four feet nine inches.

Those of New Jersey, Ohio and Mississippi are four feet ten inches. The New Orleans and Nashville road, Louisiana, is five feet six inches, and all the roads of South Carolina, Georgia and Florida, of which

E. F. JOHNSON, Esq. civil engineer, as early as 1834, communicated his views to the Auburn and Syracuse railroad company, as to the propriety of an increased width of track, and subsequently in able reports to the New York and Erie, and the New York and Albany railroad companies, advocating the wide gauge.

there are nearly 900 miles now in operation, have a width of track of five feet.

In nearly all the remaining States, the gauge of four feet eight and a half inches has been adopted.

In considering the question of gauge for your road, it is important not only to take in to view the comparative merits of various widths of track, but the ultimate design of the road, the nature of the country through which it passes, and its connection with other lines—also the state of railway improvements in the provinces, the probable effect their construction will have on the business of the canals, and finally, the position of Canada, commercially, and the benefits that will flow from the adoption of a judicious and well matured system of railways.

The primary object of your road is to open the shortest and most direct communication between Montreal and the seaboard, affording facilities at all seasons of the year for the transmission of merchandize, passengers, and the public mails, commensurate with the wants of a great commercial public.

A glance at a map showing the Atlantic coast, the St. Lawrence valley and the upper lakes, will impress the most casual observer with the important position of your road.

In connection with the Portland road, it forms a continuous line from the St. Lawrence at Montreal to the Atlantic at Portland, which is from 70 to 100 miles shorter than any other line of improvement between these points, connecting on the one hand with a long line of inland navigation including a vast and fertile territory, and terminating on the other at one of the best harbors on the Atlantic coast.

These are the features in your road which give it a commanding position, and indicate that, ultimately, it must constitute the great thoroughfare and outlet for an immense trade. With a reasonable degree of assurance that these results will be realized, it appeared to me the part of wisdom that you should in determining on the plan of the road avail yourselves of all the improvements which long experience in this species of intercommunication may have suggested.

To keep pace with the increasing facilities of transportation, to meet the demands of a rapidly increasing trade, to compete successfully with rival lines, whose object is to divert trade from the St. Lawrence valley, and the public works of Canada, seemed sufficient reasons for giving to your road an enlarged capacity.

In northern climates it has been found extremely difficult to keep railways in a proper state of adjustment, and various expedients have been resorted to with a view more effectually to guard against the effects of frost.

Efforts to overcome this difficulty, have to a limited extent been successful, but it is only by constant attention and great cost that railways are retained in that state of repair required by a proper regard to safety and economy of transportation. Any inequalities in the surface of the rails from frost or other causes, communicates to the cars an irregular rocking motion which adds to the resistance

to be overcome and the inconvenience of passengers.

The increase of base afforded by a wider track with wheels of given size, lowers the centre of gravity and allows greater ease and steadiness of motion in the cars, and consequently less wear and tear both to the machinery and the road and less danger of accidents.

With a view to the better accommodation of passengers, many railway companies in the United States have ordered cars of increased dimensions, some of which are 9½ feet wide, yet this increase is strongly opposed by car builders and is well known to operate unfavorably from the too great overhanging weight.

On long lines it is desirable to have large and well ventilated cars which will permit each passenger to have a separate seat with arms upon which he may lean, and room sufficient to change his position without incommoding or annoying the person in the adjoining seat; comfortable saloons should be provided for ladies and children, and the passage ways through the cars should be sufficiently wide to permit passengers to walk about and pass each other conveniently. With the narrow gauge these objects cannot be accomplished; but with the width of track adopted for your road, these improvements may be readily made, and still the motion of the cars with this increased width will be easier than that of smaller cars on narrow gauge roads.

Your road will furnish a cheap and expeditious conveyance for emigrants, by which they will be enabled to reach their place of destination at the most favorable period for securing a crop the first season of their arrival in the country.

The transportation of emigrants will undoubtedly constitute an important branch of business, and for the second class cars the additional width allowed by a wider gauge, will permit an increase in the number of seats and a most advantageous arrangement for a larger number of passengers in a given number of cars. The weight of car per passenger carried would in this case be less than on narrow gauge roads. For first class passenger cars it is preferable to give superior accommodations, which increases the number of passengers and the revenue of the road, even though the weight of car per passenger should be slightly increased.

This however with your gauge remains a matter of choice; for you may have the same weight of car with the inferior accommodations of the narrow gauge or by a very small increase of weight, furnish the most superior accommodation.

This is not a question whether the company shall construct narrow and inconvenient cars because they may cost or weigh less, but it is a question in which the public are interested and have a right to claim the best accommodations which the gauge will permit. Besides it is well known that passengers are attracted in greater numbers to the road which gives the greatest accommodations; and therefore it becomes directly the interests of the company to offer every in-



ducement which will secure the patronage of the public.

On the Great Western railway in England which has a gauge of 7 feet, the weight of car per passenger carried, is no greater than the average of the London and Birmingham, Grand Junction, Dover and Brighton, South Western and Midland company, but affords far superior accommodation to passengers.

On the New York and Erie railway, in the State of New York, which has a gauge of 6 feet, the weight of car per passenger carried is 85 pounds less than on the narrow gauge roads there, and affords equal room for each passenger.

The nature of the business to be done on your railroad, will undoubtedly nearly resemble that of roads in the northern part of the United States; and it is supposed that 1st class passenger and merchandize cars of a similar character to those in use there, will be found more appropriate for your road than cars of any other description. In reference to freight cars, it is believed that the wider gauge of 5 1/2 feet will be found to afford superior advantage to those of the narrow track.

A greater width of car may be adopted which is better calculated for carrying all kinds of freight: much of which will be bulky.

The articles which would be transported to better advantage on large cars, are various kinds of light machinery, furniture, charcoal, hay, cattle, horses, calves, hogs, sheep, cotton, hops, wool, etc.

From the bulky character of such freight it will doubtless often be necessary to limit the load below the tonnage which should be carried by each car, for want of space, and in such case a loss of power is sustained;—for the number of cars in the train will be increased and their weight will compose a larger part of the gross load. With larger cars a less length of train would be required for the same tonnage, thereby lessening the resistance to be overcome from side winds, which increases with the length of the trains.

The resistance of a train in passing curved portions of a road, is also considerably lessened by diminishing its length.

Increased width of cars gives greater advantage in hauling a given load under the same circumstances; for it is well known that the power is applied more advantageously to short trains than to long ones, and by diminishing the number of cars the weight of useful tonnage carried is greater in proportion to the gross load.

Freight cars need not necessarily be any heavier on your gauge than they are now on most narrow gauge roads; but if we avail ourselves of the greater capacity, which the 5 1/2 feet track allows, the weight of car per ton of freight which may be carried, will be less than on the narrow gauge.

With a gauge of 4 feet 8 1/2 inches, it is found difficult to arrange the working parts of an engine, and to give the requisite dimensions to the fire box and boiler, without raising too much the centre of gravity.

Nearly all the engine builders in the United States, with whom I have consulted, ad-

mit that they labor under great difficulty for the want of more room, and that a gauge of 5 to 5 1/2 feet will allow them sufficient space to overcome all these difficulties.

It is owing to this inconvenience in arranging the parts and in making the repairs, that many builders have adopted outside cylinders for some of their engines.

These it is generally admitted are objectionable on many accounts, and are likely soon to get out of use, particularly for engines designed for high speed.

They are more usually adopted for freight engines, on account of the less speed they are required to run, but for these they are nearly abandoned by the principal builders of the eastern States.

It is however often the case that in order to make up for lost time, freight engines are necessarily run with great velocity, in which case all the objections to outside cylinders operate with full force. With this arrangement of the cylinders, the power is applied alternately to each side of the engine, which causes it to sway from side to side, and produces that galloping and oscillatory motion, so injurious to the machine and the road, and so productive of accidents. It is well known that by the application of the power nearer the centre of the machine, and the more favorable position of the working parts with inside cylinders, the above difficulties are avoided.

The greater space afforded by a 5 1/2 feet gauge permits the most favorable disposition of these parts, and all the benefits resulting from their central position are fully realized.

Another reason assigned for the adoption of outside cylinders, was the frequent breaking of crank axles; but it is only necessary to manufacture these with proper care and proportion, to insure exemption from the difficulty. This has already been done and they are now deemed by many builders, as safe as the straight axle.

As before remarked, it will be found that inequalities and irregularities in the track are unavoidable, where frost operates with the force that it does here, and therefore it becomes important to lessen if practicable their evil effects upon the machinery and the road.

By increasing the width of track, the motion of the engine is easier and more steady, its various parts working more freely and with less danger of injury from sudden changes. It is desirable to have as large driving wheels as practicable without raising too much the centre of gravity of the engine. By enlarging the driving wheels, the same speed may be maintained with less velocity of the piston and less friction; and as most of the weight is on these wheels, their increased size lessens the shock which the engine receives.

Large wheels permit a more efficient and economical application of the steam, lessen the wear and tear of the working parts, and with an increased base give greater steadiness and security. Both the lateral and vertical movements of the engine being easier, its action on the road will be less injurious, and there will be less danger of its leaving the track.

The more important advantages, however, resulting to the engine from a wider track, is the enlarged size of the boiler and fire box which this increased space allows.

As the power of the engine depends upon the extent of evaporating surface, all improvements which have reference to an increase of power have been directed to an enlargement of these parts.

The space, however on the narrow gauge being limited, the only means left to increase the heating surface is to lengthen the boiler and fire box. But there is a strong objection to the increased length of boiler on account of the loss of power required in creating sufficient draft through their long tubes.

To be Continued.

One of the earliest of Mr. Stephenson's locomotive engines is now employed conveying coal, on the Darlington Railway, at a less cost per ton than any other railway in England.

#### Comparative Cost of Engines and Carriage in the Shops of the Company or by Contract.

This is an important question for railway companies to decide. It is a question upon which there is a diversity of opinion. In England we believe that the companies have generally purchased them from the manufacturers—so have they mainly in this country, though many companies have, at different times, attempted to construct their own machinery, and some continue to do it in whole, and others in part; while others again have abandoned the manufacture, and only do their own repairs.

The Great Western company, it appears from the following article, are preparing, on a large scale, to make their own machinery.

They go very far beyond us, in England, in the size of some of their driving wheels. Six feet, we believe, is as far as any of our manufacturers have gone, while eight feet are not uncommon on some of the English roads.

The London Morning Herald says: to build by

It is stated by the locomotive superintendent of the Great Western line, Mr. Daniel Godch, an eminently practical man, and regularly educated in the locomotive workshop itself, that the company can construct a locomotive and tender of the very best materials and workmanship, without stint as to the price of steel and iron, or pay for first rate men, for £400 less than they can be procured from the manufacturer. Four hundred locomotives will, it is stated, be required to work the traffic over the broad-gauge lines in the course of construction. During the last twenty months there have been manufactured at Swindon 24 engines, with tenders, and a considerable number are now in a very forward state of construction. The completion of the works will, we are informed, enable the company to put upon the line annually 60 engines with tenders, and about 250 trucks with axles and wheels. The saving to be effected in the make of each of the trucks is set down at £20. If the calculations respecting the cost of manufacturing engines, tenders, and trucks be correct, the estimated saving over a series of years is not a very difficult arithmetical problem.

The entire cost of the works at Swindon, including the outlay for the erection of the residences for the additional number of work-



men to be employed there on the completion of the buildings in progress, will, as we are officially informed, amount to about \$220,000. The station, workshop, men's residences, cricket-ground, and the church—a very beautiful structure—occupy about 14 acres of land, which have been purchased at £200 per acre, and it is stated that the cost of the additional shops for the present exclusive manufacture of locomotives, tenders, and trucks, but which, as we have observed, will hereafter be principally devoted to the repairs of locomotive and truck stock, as well as, of course, for the manufacture of the current want of locomotive stock, will amount to about £100,000. If the company turn out locomotives, tenders, and trucks at the estimated capability of the new workshops, viz., 60 locomotives, with their tenders, and 250 trucks, per annum, with the saving contemplated, it is clear that the anticipatory erection of the additional works will realize to the Great Western people a saving of about 20,000% per annum. This calculation, however, supposes that an outlay of about 25,000% required for the erection of the residences of the additional number of men wanted will return 8 per cent in the shape of rent. We are, after having inspected the houses already built at Swindon by the company, and being put in possession of a list of the rents charged, inclined to doubt whether the return upon the sum will yield more than 4 or 4½ per cent; but as these houses will be required for the additional workpeople that must be employed in repairs, when all the lines in connection with the broad-gauge system are open to the public, we can deduct as a loss to the company only the difference between the 4 or 4½ per cent and the 8 per cent dividend paid to the proprietors, or the difference between the 4 or 4½ per cent, and the rate of interest at which such 25,000% may have been borrowed by the company. Taking the saving at 25,000% and not at 20,000% per annum, and the anticipatory construction of the new works will, by the preliminary devotion of them to the manufacture of locomotive stock and trucks, produce to the company, in the course of four years, the entire cost of such works.

The locomotives that have been built at the Swindon works, and now running on the line, are amongst the best ever manufactured in this country. Not only are they the most powerful in the world, both as respects their capability to deal with heavy loads and attain high velocities, but their manufacture may be said to be almost perfect. We have frequently been over the shops when the men have been at work, and have derived much pleasure from observing the great care with which all of them attended to the duties committed to their charge. The most sedulous attention is paid to their spiritual and moral welfare by a painstaking and excellent clergyman; a well-selected library has been provided for them; a mechanics' institution formed, and a cricket ground opened for their amusement; and the happy consequence is, that a more intelligent, industrious, or well-behaved body of mechanics is

not, we believe, to be found in the kingdom. A few weeks since we gave the quantity of coke burnt by the "Great Britain," eight-wheeled engine, with a train of 90 tons, travelling at an average speed of about 37 miles per hour, between Paddington and Swindon, with five stoppages. The quantity was as high as 51 lb. per mile, and the train was very heavy, a strong wind prevailing during the whole journey, and the velocity was very high. Yesterday we had an opportunity of ascertaining the consumption of coke by the "Iron Duke," one of the eight-wheeled class of locomotives, with a train of about the same weight as the one already alluded to, but travelling at an average velocity of only 27 miles per hour, between Paddington and Swindon, with the five stoppages, and back with 60 tons at upwards of 25 miles per hour, with sixteen stoppages, and we found the average consumption of coke over the whole journey was under 20 lb. per mile. The "Iron Duke" has an eight feet driving wheel, 18 inch cylinder, and 24 inch stroke. With 60 tons up from Swindon yesterday, the driver cut off his steam at 9 inches, and kept his time at the stations with perfect ease. We believe this consumption of coke, taking the weights of the trains, the stoppages, and the speed into calculation, is as low as upon any line in the kingdom.

**Buffalo and Mississippi Railroad.**  
Continued from page 729.

We give this table of distances because we think it may be found very useful as a matter of reference.

**Table of distances—counted from Chicago, Illinois, to**

|  |      |
|--|------|
| Galena, via Rockford—stage road  | 160  |
| Prairie du Chien, via Galena and Mississippi river                             | 251  |
| Peru, on Illinois central railroad, Ill.—stage road                            | 101  |
| Quincy, via Joliet, Ill.—stage road  | 85   |
| Stephenson and Rock Island on the Mississippi river—stage road                 | 183  |
| Peoria on Illinois river—stage road  | 175  |
| Warsaw on Mississippi river, via Peoria and railroad—stage road                | 291  |
| Springfield, Ill.—stage road   | 249  |
| Southport, Wisconsin Territory—stage road                                      | 59   |
| Racine   | 69   |
| Milwaukee  | 97   |
| Head of steamboat navigation on Illinois river—canal, 100 or                   | 951  |
| Mouth of Illinois river—Illinois river and canal                               | 316  |
| St. Louis on Mississippi river—Illinois river and canal                        | 376  |
| Mouth of the Ohio river, (Gairo) on Mississippi river—Illinois river and canal | 556  |
| New Orleans, on Mississippi river—Illinois river and canal                     | 1594 |
| Mouth of the Mississippi river—Illinois river and canal                        | 1698 |
| Cairo—over the central railroad  | 420  |
| Mouth of the Wabash river—canal, Ill., Miss. and Ohio rivers                   | 675  |
| Lafayette, Ind.—same course via Wabash river                                   | 1036 |
| Madison, Ind., on Ohio river   | 951  |
| Cincinnati, on " "   | 1061 |
| Portsmouth, on " "   | 1173 |
| Milwaukee, Wisconsin Territory—lake  | 80   |
| Mackinac, Michigan—lake  | 330  |
| Mouth of Kalamazoo river, Mich.—lake   | 80   |
| St. Joseph, Mich.—lake   | 62   |
| New Buffalo, " "   | 45   |
| Michigan city, Ind., (Government survey) lake                                  | 39   |
| Detroit via Mackinac—lake  | 631  |

|   |      |
|---|------|
| Middle Island, on lake Erie—lake  | 854  |
| Sandusky point, " "   | 686  |
| Cleveland, Ohio, " "  | 731  |
| Dunkirk, N. Y., " "   | 856  |
| Buffalo, " "  | 880  |
| Point Maitland, at entrance to Welland canal—lake   | 859  |
| Kingston, Canada, on lake Ontario—lake and canal  | 1066 |
| Ogdensburg, N. Y., on river St. Lawrence—lake, canal and river  | 1125 |
| Montreal, Canada—lake, canal and river  | 1225 |
| Quebec  | 1367 |
| Gulf of St. Lawrence—lake, canal and river  | 1490 |
| Detroit—lake and central railroad   | 264  |
| Middle Island, lake Erie—lake, and central railroad   | 317  |
| Sandusky Point, Ohio—lake and central railroad  | 319  |
| Cleveland, Ohio—lake and central railroad   | 364  |
| Dunkirk, N. Y., " "   | 469  |
| Buffalo, " "  | 522  |
| Point Maitland, Canada—lake and central railroad  | 491  |
| Buffalo—railroad route through Canada—lake and central railroad   | 476  |
| Buffalo, by land, via Michigan city, Niles, Kalamazoo, central railroad, Detroit, London, Hamilton and Queenston, Canada—stage route and railroad | 562  |
| Michigan city, Ind.—Buffalo and Mississippi railroad  | 50   |
| Laporte, Indiana—Buffalo and Mississippi railroad   | 63   |
| South Bend, Indiana—Buffalo and Mississippi railroad  | 90   |
| Elkhart, Indiana—Buffalo and Mississippi railroad   | 106  |
| Union Mills, Indiana—Buffalo and Mississippi railroad   | 145  |
| Ohio and Indiana lines—Buffalo and Mississippi railroad   | 170  |
| Toledo, Ohio—Buffalo and Mississippi railroad   | 236  |
| Middle Island, via Toledo—Buffalo and Mississippi railroad and lake   | 281  |
| Sandusky Point, Toledo—Buffalo and Mississippi railroad and lake  | 278  |
| Cleveland, Ohio, via Toledo—Buffalo and Mississippi railroad and lake   | 302  |
| Dunkirk, N. Y., via Middle Island—Buffalo and Mississippi railroad and lake   | 450  |
| Buffalo, N. Y., via Middle Island—Buffalo and Mississippi railroad and lake   | 486  |
| Point Maitland, Canada, Middle Island—Buffalo and Mississippi railroad and lake   | 452  |
| Kingston, Canada, Middle Island—Buffalo and Miss. railroad, canal and lake  | 663  |
| Ogdensburg, N. Y., Middle Island—Buff. and Miss. railroad, canal and lake   | 722  |
| Quebec, Canada, Middle Island—Buff. and Miss. railroad, canal and lake  | 961  |
| Gulf of St. Lawrence, Middle Island—Buff. and Miss. railroad, canal and lake  | 1087 |
| Lower Sandusky, Ohio, via Toledo—Buff. Miss. and Ohio railroad  | 267  |
| Cleveland, Ohio, via Toledo—Buff. Miss. and Ohio railroad   | 336  |
| Ohio and Penn. line, Ohio, via Toledo—Buff. Miss. and Ohio railroad   | 404  |
| Dunkirk, N. Y., Ohio, via Toledo—Buff. Miss. and Ohio railroad  | 472  |
| Buffalo, N. Y., Ohio, via Toledo—Buff. Miss. and Ohio railroad  | 511  |
| Albany, N. Y., same course to Buffalo, and by Albany and Buff. railroad   | 827  |
| New York city—same course to Albany, and by Hudson river  | 986  |
| Boston, Mass.—same course to Albany, and by railroad  | 1037 |
| New York city, via Buff. and Miss. railroad, Ohio railroad to Dunkirk, and by New York and Erie railroad  | 940  |
| Pierpont on the Hudson—same route   | 919  |
| New York city—Buff. and Miss. railroad, lake Erie, Buff. and Albany railroad and Hudson river   | 958  |
| New York city—Buff. and Miss. railroad,   |      |



|   |      |
|---|------|
| lake Erie, Erie canal, and Hudson river,        | 958  |
| Boston, Mass., same course, and by railroad     | 1049 |
| and Albany railroad,.....                       | 1069 |
| Cincinnati, on Ohio river—Buff. and Miss.       | 474  |
| railroad, and Wabash and Miami canals           |      |
| Portsmouth, on Ohio river—Buffalo and           |      |
| Miss. railroad, Ohio railroad and Ohio          |      |
| canal,.....                                     | 645  |
| Lafayette, Ind., via Buff. and Miss. railroad,  |      |
| and Wabash and Erie canal,.....                 | 457  |
| Madison, Ind., via Michigan city, Laporte,      |      |
| Lafayette and Indianapolis,.....                | 309  |
| Lafayette, Ind., on the Wabash and Erie         |      |
| canal—same course,.....                         | 148  |
| Springfield, Ill., via Michigan city, Laporte,  |      |
| Lafayette and Danville,.....                    | 313  |
| Alton, Ill., same course to Springfield, thence |      |
| by railroad to Alton,.....                      | 373  |
| St. Louis, Mo., same course to Alton, and by    |      |
| Mississippi river,.....                         | 393  |
| Detroit by land, via Michigan city, Niles,      |      |
| Kalamazoo and railroad,.....                    | 297  |
| Big bay, Noquet, the extreme north end of       |      |
| Green bay—by lake,.....                         | 285  |

## REVENUE FROM PASSENGERS.

The information collected concerning this division of our investigation, separates itself into several parts.

**FIRST**—A distinct portion of the travel passes through Chicago, and is that furnished or attracted by the Buffalo and Chicago steamboats, and the Mail-steamboat running between Chicago and St. Joseph, in connection with the Central Railroad in Michigan.

From the best authority, the number of passengers passing east and west, taking the above boats, during the navigation season, is 500 a day. Calling the season six months, or 180 days, we have for the annual number 90,000 passengers. Allowing that only 54,000 of these would go on the rail-road, at \$6 each, the revenue from this source would amount to \$324,000.

**SECOND**—In the table of statistics, (page 40, column 20,) we have given the number of travellers passing through each of the five northern counties of Indiana, destined east and west. As these counties are situated in an east and west direction, it is supposed, the numbers are only different estimates of the same travellers, and do not include those bound in a transverse direction, who would necessarily be intercepted by the road, and would more or less contribute to its support taking the average of these counties (say 13,000) to be the number of through-passengers, paying at the rate of \$6, we have a farther accession to the revenue of \$78,000.

**THIRD**—Considering emigrants as passengers of the second class, we get from column 19 of the table the average number, say 20,000, who would pay \$4.50 each—yielding to the revenue 90,000. Under this item we may include the freight which the emigrants would pay for the transportation of their teams, goods, and perhaps much of their live stock; neglecting, however, the live stock, each wagon would weigh, on an average, 9,000 lbs., the load 16,000 lbs., and the horses 16,000 lbs.—together, two tons. The number of wagons (see column 18 of the table) we will call 5,000, making the total weight 10,000 tons, which, at \$5 a ton over the whole road, gives for this part of the revenue \$50,000. Adding together the revenue from the emigrants and their freight,

we should get from this source \$140,000; but as the whole of the emigrants and freight might not take the road, and as many who did might not pass over its whole length, we will make a liberal allowance, and call the revenue \$100,000.

**FOURTH**—The way-travel, which we consider distinct from the second item, depends upon the density of the population, and in some degree on the amount of capital employed in manufacturing purposes, within a limited range of this railroad. It was estimated by the Directors of the New York and Erie railroad, in their second report in 1841, that the population in the counties contiguous to the Erie canal, its branches, and the railroads and other roads along its line, contributed to the revenue of those works, at the rate of three dollars per individual. Applying this rule to the population given at page 66, viz: 140,000 souls, we should obtain for this item, the sum of \$421,818. But as this ratio seems high; and, as it may be, that the different occupations and circumstances of trade, differ in the two districts, having some influence on this ratio, we will call the revenue from this source, only half of the above amount, say \$200,000.

**FIFTH**—The above four items are specific, and based on reliable data. To these we propose to add a fifth item, embracing those passengers who would be diverted from other present channels of communications, besides those above considered, in consequence of the greater facilities offered in the proposed road, by the saving of time, expense, and avoiding of greater risk of life, and injury, in river, canal or lake boats. The railroad, if constructed upon the substantial plan the estimate contemplates, and if a speed of perhaps 40 miles an hour be adopted, would attract many travellers from other parallel lines, and may have in many cases a controlling influence in directing other roads yet to be built, towards this main artery between the east and west. Possibly a portion of the Canada travel, to take advantage of the superior facilities of the line, might be drawn across or around the head of Lake Erie, and contribute to the revenue. Should a railroad be built from Detroit to Toledo, with a distance no greater than that found by a direct route measured on Farmer's Map of Michigan: say 53 miles. The distance from Detroit via Toledo to Michigan city, would be the same as from Detroit via Central railroad and St. Joseph, thus:—

|                                     |           |
|-------------------------------------|-----------|
| Detroit to Toledo,.....             | 53 miles. |
| Toledo to Michigan City,.....       | 186       |
| Detroit to St. Joseph,.....         | 239       |
| St. Joseph by land to M. city,..... | 37        |

Under the above considerations, and for the immediate contributions of such sources, is added the sum of \$50,000.

## REVENUE FROM FREIGHT.

Much as has been given in the preceding pages, with a view of satisfying those persons who may take an interest in this project, that there would be carried on the road, a large amount of the products of the field, forest,

mines, and manufactures, within its own proper region; and that it would draw largely from the other connected lines of communication already in operation, in process of completion or projected; when all should form one extended system. Still it is somewhat difficult to assign satisfactorily, the precise amount of a portion of the freight which would be offered to the road at certain points; and the revenue to be derived therefrom. In other districts we have good assurance that the road would be well encouraged; and we proceed to show the estimated amount of receipts, based on a tariff which would compete with the lake navigation; using recent statistics, particularly the table at pages 38, 39, 40, 41.

**FIRST**—Of the business which was done at Chicago in 1844-5 [see p. 43-44-45] the road would probably take of the high cost, and light articles, an amount, which would yield a revenue of \$20,000. But if the light and costly goods now imported into St. Louis for its own consumption, and for the trade of the Upper Mississippi, are to be diverted on the opening of the Illinois and Michigan canal, and the Chicago and Galena railroad, from the Ohio and Mississippi rivers, the present channels, to the lakes, we might with safety rely on the above amount being increased to \$50,000. And if we add to this sum, the revenue to be derived from wheat, and other cheap articles, which would without question, be transmitted over the road from Chicago, during the winter, \$50,000, we have altogether for this item, \$100,000.

**SECOND**—The amount of way-freight can be stated with more certainty. Wheat, on which the charges for freight would compete with the lake navigation in the summer season, forwarded—

|   |           |
|---|-----------|
| From eleven counties in Indiana, would pay                        | \$406,125 |
| From the two counties in Ohio, Williams and Lucas,.....           | 24,001    |
| From five counties in Michigan,.....                              | 114,372   |
| .....   | \$544,501 |
| Revenue from merchandise imported into the same 18 counties,..... | 37,080    |
| Revenue from Salt imported into the same 18 counties,.....        | 13,309    |

Aggregate revenue from some of the most important articles of export and import, \$454,950.

**THIRD**—This item is contingent like the 5th item of the passenger revenue, and is added for the same general reasons, depending upon the superior facilities anticipated from this line, in consequence of its direct connection with the Ohio railroad to Cleveland, the Illinois and Michigan canal, and the Chicago and Galena railroad. It is supposed that 2500 tons, exclusive of the tonnage belonging to St. Louis and Galena, noticed in the 1st item, would be a small allowance for this portion of the business, calling the charge 3 cents per ton per mile, or \$7.00 through.

The revenue would be.....\$17,500

**FOURTH**—For carrying the United States Mail,.....\$22,500

**GROSS REVENUE FROM PASSENGER TRAVEL.**

1st item—Through travel diverted from



|   |           |
|---|-----------|
| Steamboats.....   | \$324,000 |
| 2d item—Through travel now passing along the route..... | 78,000    |
| 3d item—Emigrants and their freight.....                | 100,000   |
| 4th item—Way travel.....                                | 200,000   |
| 5th item—Contingent travel.....                         | 50,000    |

—\$752,000

**Gross Revenue from Freight.**

|  |           |
|--|-----------|
| 1st item—Through freight furnished by Chicago..... | \$160,000 |
| 2d item—Way freight.....                           | 451,950   |
| 3d item—Contingent freight.....                    | 17,500    |
| 4th item—Carrying the United States Mail.....      | 22,550    |

—\$595,000

Total estimated revenue for Freight and Passengers.....\$1,347,000

Deduct annual cost of working the road, say 50 per cent. of the Gross Revenue.....\$673,500

Net Revenue—equal to 151 per cent. on \$4,267,000 the estimated cost of the road with a 50 lbs. rail, or nearly 13 per cent. on \$5,215,000, the estimated cost with a 80 lbs. rail.....\$673,500

It should be stated here, that the above estimate of the revenue from freight supposed to be carried over the road at rates competing with the Lake navigation, includes all the exports and imports given in the statistics properly belonging to the way-business. If we retain these competing prices, a portion of the business might still be conducted by the lake boats; but a small reduction in the railroad tariff would ensure this business to the road: still it is assumed, that the road will be taken in preference to the lake boats; even if the charges are alike.

The total tonnage included in the above four items of freight which would move on the railroad east and west, is estimated at 124,000 tons. Of this tonnage it is estimated 106,600 tons will move east; and 18,000 tons west—and the whole tonnage would be equivalent to 17,854,616 tons carried one mile, computing upon the actual distances the freight would pass on the road. There was carried on the Western railroad in 1845, 14,560,223 tons one mile.

The average cost per ton per mile, of the same total tonnage is 34 cents, excluding, of course the emigrant teams and their effects. The amount of tonnage passing east in a year, would require two trains a day, each to load with 170 tons of freight, this load, however, would be confined to the most easterly locomotive stages of the road, and where there would be no grades of importance to ascend, the country being flat. The average daily load of a train passing east from Indiana into Ohio, and which would have to pass up a grade of 44 feet per mile, is found to be 150 tons; and at points further west the loads would be diminished.

The freight engines made by Messrs. Hinkley & Drury with eight wheels, have an insistent weight on the driving wheels of 20,000 lbs. Calling the friction of the train 8 lbs. per ton, and the adhesion of the driving wheels one-fifth of the insistent weight, we get a power to draw up a plane 45 feet to a mile, a gross load of 480,000 lbs. nearly, including the tender, the net load in this car might be called 152 tons; consequently we have a power sufficient to draw the required load of 150 tons up the grade of 44 feet per

mile. It would be expedient to arrange the locomotive stages, so as to have a short one to include the three steep grades at miles 67, 79 and 82 on the line—[see p. p. 191]; such an arrangement would allow the engines on that division to make three trips a day, on the occurrence of an extra amount of freight to be forwarded east.

The passenger engines, made by the same company, weighing 16 tons, with 12 tons insistent weight on the driving wheels, would have ample power to draw the regular trains fully loaded, up grades rising at the rate of 45 feet per mile, supposing the train to be composed of

|   |         |
|---|---------|
| 2 first class 8 wheel passenger cars, carrying 128 passengers | 61      |
| 1 second " " " "  | 61      |
| 1 baggage 4 wheeled car, " " "                                | 41 tons |
| 3 cars for emigrant's effects, " " "                          | 111     |

Such a train could be propelled up the supposed grade at a velocity exceeding 30 miles an hour, provided the boiler of the locomotive had sufficient power to produce the requisite quantity of steam. That is to say, the adhesion would be sufficient to draw the load at that velocity.

**PASSENGERS MOVED ON THE RAILROAD.**

The total number of passengers, which will pass on the road, in both directions, reduced to through passengers, may be stated as follows:

|  |        |
|--|--------|
| Number of passengers according to the 1st item of passenger revenue..... | 54,000 |
| Number of passengers according to the 2d item of passenger revenue.....  | 13,000 |
| Number of passengers according to the 3d item of passenger revenue.....  | 14,222 |
| Number of passengers according to the 4th item of passenger revenue..... | 33,334 |
| Number of passengers according to the 5th item of passenger revenue..... | 8,334  |

Total number reduced to through passengers, 122,890

Total number daily, reduced to through passengers.....392

Allowing four trains to run over the road per day, the quota for a train would be 98 passengers.

The effects of the emigrants would amount to 7,200 tons annually, and if we suppose the whole to be moved westwardly by two trains, the amount per train would be 114 tons. These effects in practice, would no doubt be carried by the freight trains, as they generally would go light loaded in returning west, and relieve the passenger trains of this part of their burden, supposed in the statement above, to be attached to them, amounting with the three cars to about 10 tons.

The railroad, we are satisfied, could be worked as cheaply as any of the railroads in Massachusetts. The fuel for the locomotives could be had for a trifle more than the cost of cutting and hauling it to the several depots along the line. Coal for the repair shops, at either terminus of the road, could be had at exceedingly low prices, and could be substituted for the wood fuel of the locomotives, when the country becomes divested of the present extensive tracts of timbered lands. The infrequency of deep snows would exempt the road from an item of expense, which is of considerable importance on the eastern rails, for here the snow seldom covers the ground in depth exceeding 6 or 8 inches. The cause of this deficiency of snow may be

sought for, in the peculiar position of the strip of country through which the line runs, in relation to the great sheets of water forming the Upper Lakes. One of these, Lake Michigan, having a depth increasing from 600 feet at its south end, to 900 feet at its north; never freezes entirely over; and the ice that is formed, is kept in motion much of the time by the winds, which drift it along the shores, or drives it from one side of the lake to the other. The prevailing wind blows from the northwest, wafting the warmed atmosphere from the surface of the lake, over northern Indiana and Ohio, probably changing into rain; what otherwise would be snow in those districts. In summer, by the same operation of nature, the temperature of the same region, is kept comparatively cool.

In our estimate of the revenue of the railroad, we have endeavored to exhibit a fair statement of the business that may be anticipated for the first year or two after the road has been opened; but should others form a different opinion from what has been given here, I would refer them for further evidence of the great increase of the lake commerce to the numerous publications which have appeared from time to time in the newspapers and public journals, and to the more authentic reports made at different times to Congress, touching the actual state and progress of this commerce, and the statistics of the states and territories bordering the lakes.

It is allowed on all hands, that alleviations from the existing impediments and inconveniences are greatly wanted on these waters; and that government, in case of refusing aid for removing these inconveniences, would seriously affect the enterprise of a large portion of the Union.

I feel in a degree authorized to allude here to an opinion, concerning the importance of the lake commerce, formed by the Board of Commissioners who went out from government in 1845 to view the harbors and other public works on the lakes. I have been informed that they, after their investigation, came to the conclusion (which possibly has been published) that such was the increase, prospectively considered, of the business on the lakes, and the difficulties which presented themselves in opposition to any feasible plan for accommodating the navy that would be required in a few years; that if government should then begin to erect the necessary structures, supposing they could appropriate the large sums of money that would be wanted, these works could not be executed with the acceleration the necessities of the trade would demand.

Under such an impression of the amount of business which is in a few years to have place, according to the view just stated, can it be doubted that a railroad line so acceptable in its geographical and statistical position, would not yield to the stockholders a liberal remuneration, and at the same time be a work, both in a civil and military point of view, of great public convenience.

I am most respectfully,  
Your obedient servant,  
Geo. R. Baldwin



**NOTICE TO CONTRACTORS.—GREAT WESTERN RAILWAY, CANADA WEST.** Sealed proposals will be received until the 1st day of next October, at the Office of the Great Western Railway Company, for the Grading and Masonry of the Western Division, extending from London to Windsor, a distance of one hundred and ten miles; also for the branch to Port Sarnia, forty-five miles in length.

Plans and Specifications of the work can be examined at the Engineers' Office, in Hamilton and London, on and after the 15th of September. 2700  
C. B. STUART, Engineer.  
Hamilton, July 30, 1847. 3m33

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Philadelphia, Pa., April 6, 1844. 1a45

**PATENT HAMMERED RAILROAD, SHIP** and Boat Spikes. The Albany Iron and Nail Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscriber at the works, will be promptly executed. **JOHN F. WINSLOW, Agent.**

Albany Iron and Nail Works, Troy, N. Y. The above spikes may be had at factory prices, of Erastus Corning & Co., Albany; Hart & Merritt, New York; J. H. Whitney, do.; E. J. Etting, Philadelphia; Wm. E. Coffin & Co., Boston. 1a45

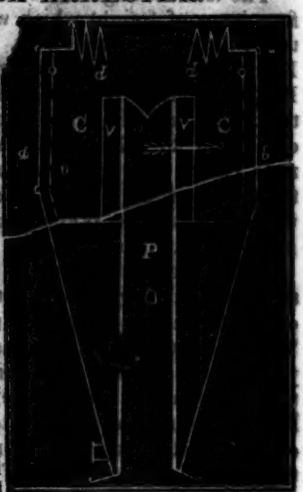
**MACHINE WORKS OF ROGERS,** Ketchum & Grosvenor, Paterson, N. J. The undersigned receive orders for the following articles, manufactured by them of the most superior description in every particular. Their works being extensive and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and despatch. 1a45

**Railroad Work.** Locomotive steam engines and tenders; Driving and other locomotive wheels, axles, springs & flange tires; car wheels of cast iron, from a variety of patterns, and chills; car wheels of cast iron with wrought tires; axles of best American refined iron; springs; boxes and bolts for cars.

**Cotton, Wool and Flax Machinery** of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and Millwright work generally; hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

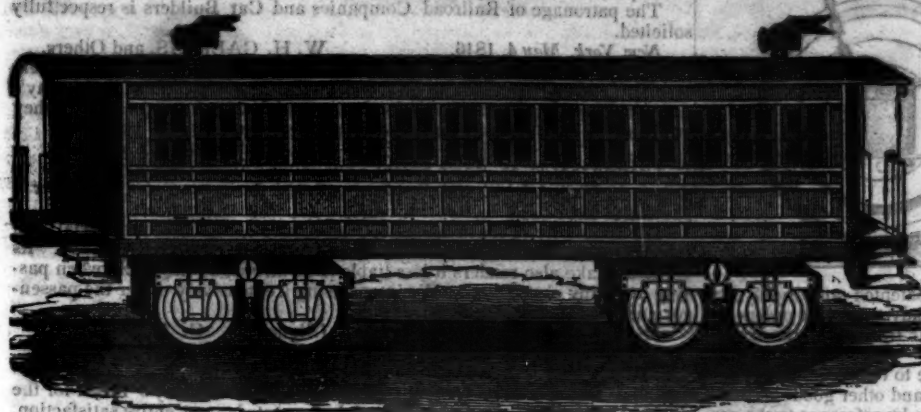
**ROGERS, KETCHUM & GROSVENOR,** Paterson, N. J., or 60 Wall street, N. York.





# DAVENPORT & BRIDGES'

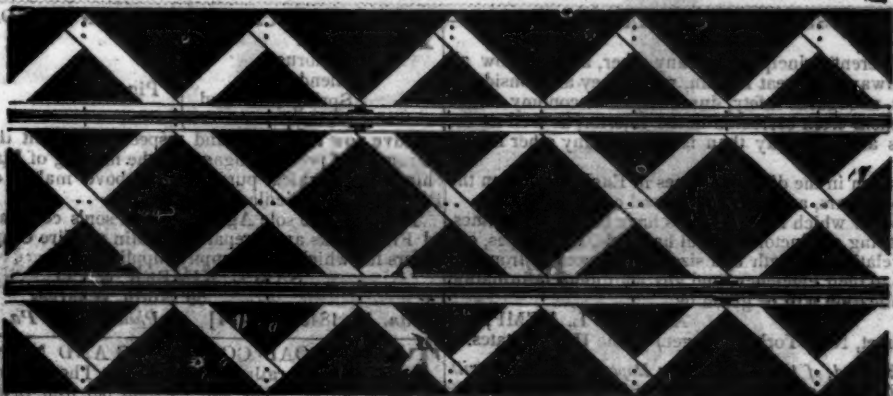
## CAR WORKS, CAMBRIDGEPORT, MASS.



Manufacture to Order, Passenger and Freight Cars of every description, and of the most improved pattern; also furnish Snow Ploughs and Chilled Wheels of any pattern and size. Forged Axles, Springs, Boxes and Bolts for Cars at the lowest prices.

All orders punctually executed and forwarded to any part of the country. Our Works are within fifteen minutes ride from State street, Boston—Omnibuses pass every fifteen minutes.

## THE HERRON RAILWAY TRACK,



As seen stripped of the top ballasting

GOLD MEDAL AWARDED THE INVENTOR BY THE AMERICAN INSTITUTE.

**THE UNDERSIGNED RESPECTFULLY** invites the attention of Engineers, and Railroad Companies, to some highly important improvements he has recently made in the Herron system of Railway structure. These improvements enable him to effect a very large reduction in the quantity of Timber, and cost of construction, without impairing the strength of the Track, or its powers of resisting frost, while they secure additional features of excellence in the Drainage and facility of making Repairs.

The above cut represents the "Herron Track" as it is laid on the Philadelphia and Reading, and on the Baltimore and Susquehanna Railroads. The intersection of the sills of the trestles are 5 feet from centre to centre, while in the new construction they are only 2 1/2 feet. This renders the string piece unnecessary, thus removing the only objectionable feature found in the Track.

The result of experience has proved that all Tracks constructed with longitudinal timbers, such as mud sills, and more especially, the continuous bearing string pieces retain the rain water that falls between the Rails which, being thus confined, settles along those timbers, and accumulating in quantity flows rapidly along them on the descending grades, washing out the earth from under the timber, and frequently causing large breaches in the embankments of the road. Whereas all water intercepted by the oblique sills of the trestles, is discharged immediately into the side ditches.

In the 5 foot plan, the Track occupies a Road bed nearly 11 feet wide, while the new construction takes

but 8 feet, the timber being more concentrated under the Rails. A block of hard wood, about 2 feet long and 15 inches wide, is introduced into a square of the trestle for the purpose of giving an additional, and effectual support to the joints of the Rails, which rest upon it. Should these joint blocks become chafed and worn by the working, and imbedding of the chairs, as is now the case on all Railroads, they can be readily replaced without any derangement of the timbers less liable to wear.

The following is a general estimate of its cost near the seaboard. In the interior it will be considerably less, but to suit the requirements of each case.

| ESTIMATE OF THE PROBABLE COST OF ONE MILE.                 |                                     |
|--|-------------------------------------|
| 4,224 Timbers, 11 ft. long, 3 x 6 inches =                 | 68,696 ft. b.m., at \$10 = \$686 96 |
| 567 Oak joint blocks 2 ft. x 3 x 15 in. =                  | 4,403 ft. b.m., at \$13 = 57 24     |
| 13,000 Spikes = 2,250 lbs. at 41 cts =                     | 101 25                              |
| Workmanship free of patent charge =                        | 600 00                              |
| <b>Cost of one mile including the laying of the Rail =</b> | <b>\$1,445 45</b>                   |

He has made other important improvements, which will be shown in properly proportioned models, that give a much better idea of the great strength of the Track than a drawing will do.

Sales of the Patent right to all the distant States will be made on liberal terms.

JAMES HERRON,  
Civil Engineer and Patentee.  
No. 277 South Tenth St., Philadelphia.

## LAP-WELDED WROUGHT IRON TUBES

FOR

**TUBULAR BOILERS,**  
FROM 1 1/4 TO 6 INCHES DIAMETER,  
and

ANY LENGTH, NOT EXCEEDING 17 FEET.

These Tubes are of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER,

Patentee.

1725 28 Platt street, New York.

## RAILROAD IRON.

**MOUNT SAVAGE IRON WORKS**

THIS Company are prepared to execute orders for Railroad Iron, of any pattern, and equal in point of quality to any other manufactured.

Address J. M. HOWE

Dec. 25, 1871 Pres. Mt. Savage Iron Works, Maryland.

ENGINEERS AND SURVEYORS

INSTRUMENTS MADE BY

EDMUND DRAPER,

Surviving partner of

STANCLIFFE & DRAPER.



No 23 Pear street, below Walnut, Philadelphia.



THE SUBSCRIBER has on hand a good assortment of his best Leveling and Surveying Instruments, among them his improved Compass for taking angles without the needle—also Bells, suitable for Churches, Railroad Depots, etc.

ANDREW MENEELY.

West Troy, May 19, 1847.

**PIG AND BLOOM IRON.**—THE SUBSCRIBERS are agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware, etc. Also several brands of the best Puddling Iron, Juniata Blooms suitable for Wire, Boiler Plate, Are Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by

A. WRIGHT & NEPHEW,

Vine St. Wharf, Philadelphia.

**RAILROAD IRON.**—THE "MONTGOMERY" Iron Company, Danville, Pa., is prepared to execute orders for the heavy Rail Bars of any pattern now in use, in this country or in Europe, and equal in every respect in point of quality. Apply to

MURDOCK, LEAVITT & CO., Agents.

1748 77 Pine St., New York.

**LAWRENCE'S ROSENDALE HYDRAULIC CEMENT.** This cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Floods and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight paper-barrels, by

JOHN W. LAWRENCE,

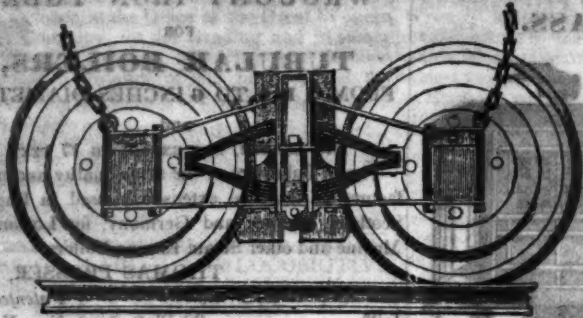
142 Front street, New York.

Orders for the above will be received and promptly attended to at this office.



# RAY'S EQUALIZING RAILWAY TRUCK.—THE SUBSCRIBER

ber having recently formed a business connection in the City of New



York, expressly for the manufacture of the newly patented and highly approved Railroad Truck of Mr. Fowler M. Ray, is ready to receive orders for building the same, from Railroad Companies and Car Builders in the United States, and elsewhere.

The above Truck has now been in use from one to two years on several roads a sufficient length of time to test its durability, and other good qualities, and to satisfy those who have used it, as may be seen by reference to the certificates which follow this notice.

There have been several improvements lately introduced upon the Truck, such as additional springs in the bolster of passenger cars, making them delightful riding cars—adapting it to tenders, trucks forward of the locomotive, and freight cars, which, with its original good qualities, make it in all respects the most desirable truck now offered to the public.

Orders for the above, will, for the present, be executed at the New York Screw Mill, corner 33d street and 3d avenue, (late P. Cooper's rolling mills) and at the Steam Engine Shop of T. F. Seor & Co., foot of 9th street, East

## ENGLISH PATENT WIRE ROPES—FOR THE USE OF MINES, RAILWAYS, ETC.—

for sale or imported to order by the subscriber. These Ropes are manufactured on an entirely different principle from any other, and are now almost exclusively used in the collieries and on the railways in Great Britain, where they are considered to be greatly superior to hempen ropes, or iron chains, as regards safety, durability and economy. The plan upon which they are made effectually secures them from corrosion in the interior, as well as the exterior of the rope, and gives a greater compactness and elasticity than is found in any other manufacture.

Many of these ropes have been in constant operation in the different mines in England, and on the Blackwall and other inclined planes, for three and four years, and are still in good condition.

They have been applied to almost every purpose for which hempen ropes have been used—mines, heavy cranes, standing rigging, window cords, lightning conductors, signal halyards, tiller ropes, etc. Reference is made to the annexed statement for the relative strength and size. Testimonials from the most eminent engineers in England can be shown as to their efficiency, and any additional information required respecting the different descriptions and application will be given by

ALFRED L. KEMP,  
75 Broad street, New York, sole agent in the United States.

Statement of Trial made at the Woolwich Royal Dock Yard, of the Patent Wire Ropes, as compared with Hempen Ropes and Iron Chains of the same strength—October, 1841.

| WIRE ROPES.           |                           |                    | HEMPEN ROPES.             |                    |        | CHAINS.               |                      |  | STRENGTH<br>Tons. |
|-----------------------|---------------------------|--------------------|---------------------------|--------------------|--------|-----------------------|----------------------|--|-------------------|
| Wire gauge<br>number. | Circumference<br>of rope. | Weight per fathom. | Circumference<br>of rope. | Weight per fathom. |        | Weight per<br>fathom. | Diameter<br>of iron. |  |                   |
| 11                    | 1 1/2                     | 13 1/2             | 10                        | 24                 | 50     | 15-16                 | 20                   |  |                   |
| 13                    | 1 3/4                     | 8                  | 8                         | 16                 | 27     | 11-16                 | 13 1/2               |  |                   |
| 14                    | 1 3/4                     | 6 1/2              | 7 1/2                     | 12                 | 17     | 9-16                  | 10 1/2               |  |                   |
| 15                    | 2                         | 5 1/2              | 6 1/2                     | 9                  | 13 1/2 | 1-2                   | 7 1/2                |  |                   |
| 16                    | 2 1/4                     | 4 3/4              | 6                         | 8                  | 10 1/2 | 7-16                  | 7                    |  |                   |

N.B. The working load, with a perpendicular lift, may be taken at 6 cwt. for every lb. weight per fathom, so that a rope weighing 5 lbs. per fathom would safely lift 3360 lbs., and so on in proportion.

**RAILROAD SCALES.—THE ATTENTION** of Railroad Companies is particularly requested to Ellicott's Scales, made for weighing loaded cars in trains, or singly, they have been the inventors, and the first to make platform scales in the United States, supposing that an experience of 20 years has given a knowledge and superior advantage in the business.

The levers of our scales are made of wrought iron, all the bearers and fulcrums are made of the best cast steel, laid on blocks of granite, extending across the pit, the upper part of the scale only being made of wood. E. Ellicott has made the largest Railroad Scale in the world, its extreme length was one hundred and twenty feet, capable of weighing ten loaded cars at a single draft. It was put on the Mine Hill and Schuylkill Haven Railroad.

We are prepared to make scales of any size to weigh from five pounds to two hundred tons.

ELLICOTT & ABBOTT,  
Factory, 9th street, near Coates, cor. Melon st.  
Office, No. 3 North 5th street,  
1935 Philadelphia, Pa.

**NICOLL'S PATENT SAFETY SWITCH** for Railroad Turnouts. This invention, for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design.

It acts independently of the main track rails, being laid down, or removed, without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two Castings and two Rails; the latter, even if much worn or used, not objectionable.

Working Models of the Safety Switch may be seen at Messrs. Davenport and Bridges, Cambridgeport, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained on application to the Subscriber, Inventor, and Patentee  
G. A. NICOLLS,  
ja45 Reading, Pa.

river, (of which firm the subscriber was late a partner) under the immediate supervision of Mr. Ray himself.

Several sets of trucks containing the latest improvements have recently been turned out for the New York and Erie railroad, and the New Jersey Transportation company, which may be seen upon said roads.

The patronage of Railroad Companies and Car Builders is respectfully solicited.

New York, May 4, 1846.

W. H. CALKINS, and Others.

To all whom it may concern:—This is to certify that the New Haven, Hartford and Springfield railroad co., have had in use six sets of F. M. Ray's patent trucks for the last 20 months, during which time it appears to me, they have proved to be the best and most economical truck now in use.

[Signed,]

WILLIAM ROE, Supt of Power.

I certify that F. M. Ray's Patent Equalizing Railroad Truck has been in use on the Philadelphia and Reading railroad for some time past, under a passenger car.

For simplicity of construction, economy in cost, lightness of material, and extreme ease of motion, I consider it the best truck we have ever used. Its peculiar make also renders it less liable to be thrown off the track, when passing over any obstruction. We intend using it extensively under the passenger and freight cars of the above road.

Reading, Pa., October 6, 1845.

[Signed,] G. A. NICOLL,

Supt. Transportation, etc., Philadelphia and Reading Railroad.

To all whom it may concern:—This is to certify that the New Jersey Railroad and Transportation company have used Fowler M. Ray's Truck for the last seven months, during which time it has operated to our entire satisfaction. I have no hesitation in saying that it is the simplest and most economical truck now in use.

[Signed,]

T. L. SMITH,

Jersey City, November 4, 1845.

This is to certify that F. M. Ray's Patent Equalizing Railroad Truck has been in use on the Long Island railroad for the last year, under a freight car.

For simplicity of construction, economy in cost, lightness of material and ease of motion, I consider it equal to any truck we have in use.

Long Island Railroad Depot,

[Signed,]

JOHN LEACH, Supt. Motive Power.

Jamaica November 12, 1845.

## THE SUBSCRIBERS, AGENTS FOR

the sale of

Codorus,

Glendon,

Spring Mill and

Valley,

Pig Iron.

Have now a supply, and respectfully solicit the patronage of persons engaged in the making of Machinery, for which purpose the above makes of Pig Iron are particularly adapted.

They are also sole Agents for Watson's celebrated Fire Bricks and prepared Kaolin or Fire Clay orders for which are promptly supplied.

SAM'L. KIMBER, & CO.,

59 North Wharves,

Jan. 14, 1846.

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Philadelphia, Pa.

**TO RAILROAD COMPANIES AND MANUFACTURERS** of railroad Machinery. The subscribers have for sale Am. and English bar iron, of all sizes; English blister, cast, shear and spring steel; Juniata rods; car axles, made of double refined iron; sheet and boiler iron, cut to pattern; tiers for locomotive engines, and other railroad carriage wheels, made from common and double refined B. O. iron; the latter a very superior article. The tires are made by Messrs. Baldwin & Whitney, locomotive engine manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside.

THOMAS & EDMUND GEORGE,

245 N. E. cor. 12th and Market sts., Philad., Pa.

**TO LOCOMOTIVE AND MARINE ENGINE BOILER BUILDERS.** Pascal Iron Works, Philadelphia. Welded Wrought Iron Flues, suitable for Locomotives, Marine and other Steam Engine Boilers, from 2 to 5 inches in diameter. Also, Pipes for Gas, Steam and other purposes; extra strong Tube for Hydraulic Presses; Hollow Pistons for Pumps of Steam Engines, etc. Manufactured and for sale by

MORRIS TASKER & MORRIS,

Warehouse S. E. corner 3d and Walnut Sts., Philadelphia.

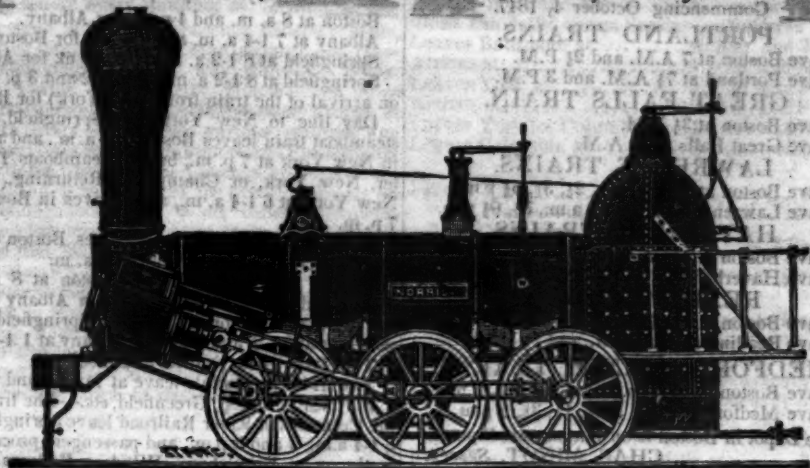
**THE SUBSCRIBER IS PREPARED TO** execute at the Trenton Iron Works, orders for Railroad Iron of any required pattern, and warranted equal in every respect in point of quality to the best American or imported Rails. Also on hand and made to order, Bar Iron, Braziers' and Wire Rods, etc., etc.

PETER COOPER 17 Burling Slip,  
1910 New York.



# NORRIS' LOCOMOTIVE WORKS.

BUSH HILL, PHILADELPHIA, Pennsylvania.



**MANUFACTURE** their Patent 6 Wheel Combined and 8 Wheel Locomotives of the following descriptions, viz:

| Class | 1 | 15 inches Diameter of Cylinder, x 20 inches Stroke. |
|-------|---|---|
| "     | 2 | 14  |
| "     | 3 | 14 1/2  |
| "     | 4 | 12 1/2  |
| "     | 5 | 11 1/2  |
| "     | 6 | 10 1/2  |

With Wheels of any dimensions, with their Patent Arrangement for Variable Expansion. Castings of all kinds made to order: and they call attention to their Chilled Wheels, for the Trucks of Locomotives, Tenders and Cars.

**NORRIS, BROTHERS.**

**KEARNEY FIRE BRICK. F. W. BRINLEY**, Manufacturer, Perth Amboy, N.J. Guaranteed equal to any, either domestic or foreign. Any shape or size made to order. Terms, cash on delivery of brick on board. Refer to:

- James P. Allaire, New York.
- Peter Cooper, New York.
- Murdoch, Leavitt & Co., New York.
- J. Triplett & Son, Richmond, Va.
- J. R. Anderson, Tredegar Iron Works, Richmond, Va.
- J. Patton, Jr., Philadelphia, Pa.
- Colwell & Co., Philadelphia, Pa.
- J. M. L. & W. H. Seovill, Waterbury, Conn.
- N. E. Screw Co., Providence, R. I.
- Eagle Screw Co., Providence, R. I.
- William Parker, Supt. Bost. and Worc. R. R.
- New Jersey Malleable Iron Co., Newark, N. J.
- Gardner, Harrison & Co., Newark, N. J.

25,000 to 30,000 made weekly.

**THE NEWCASTLE MANUFACTURING** Company continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack screws, Wrought iron work and Brass and Iron castings, of all kinds connected with Steamboats, Railroads, etc.; Mill Gearing of every description; Cast wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives. The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention. **ANDREW C. GRAY**, President of the Newcastle Manuf. Co.

**RAILROAD IRON AND LOCOMOTIVE** Tyres imported to order and constantly on hand by **A. & G. RALSTON**, Mar. 20th 4 South Front St., Philadelphia.

**AP-WELDED WROUGHT IRON TUBES** for Tubular Boilers, from 14 to 15 inches diameter, and any length not exceeding 17 feet—manufactured by the Caledonian Tube Company, Glasgow, and for sale by **IRVING VAN WART**, 19 Platt street, New York.

**JOB CUTLER**, Patented. These Tubes are extensively used by the British Government, and by the principal Engineers and Steam Marine and Railway Companies in the Kingdom.

**SPRING STEEL FOR LOCOMOTIVES**, Tenders and Cars. The Subscriber is engaged in manufacturing Spring Steel from 1 1/2 to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used, its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address **JOAN F. WINSLOW, Agent**, Albany Iron and Nail Works.

**THE SUBSCRIBERS ARE PREPARED TO** execute orders at their Phoenix Works for Railroad Iron of any required pattern, equal in quality and finish to the best imported. **REEVES, BUCK & CO.**, Philadelphia, **ROBERT NICHOLS, Agent**, No. 79 Water St., New York.

**PATENT INDESTRUCTIBLE WATER** Pipes. The subscribers continue to manufacture the above Pipes, of all the sizes and strength required for City or Country use, and would invite individuals or companies to examine its merits. This pipe, unlike cast iron and lead, imparts neither color, oxide or taste, being formed of strongly riveted sheet iron, and evenly lined on the inside with hydraulic cement. While in the process of laying, it has a thick covering externally of the same—thus forming nature's own conduit of stone. The iron being thoroughly encased or both sides with cement, precludes the possibility of rust or decay, and renders the pipe truly indestructible. The prices are less than those of iron or lead. We also manufacture Buses and D. Traps, for Water Closets, on a new principle, which we wish the public to examine at 112 Fulton street, New York.

**J. BALL & CO.**

**CONNECTION BETWEEN THE BOSTON** and Lowell and the Boston and Maine Railroads. On and after April 1st, 1847, passenger trains

between these two roads, will run as follows, viz: Leaving Lowell at 7:11 1/4 a.m., and 2:12, 4:12, and 6:12 p.m., to connect at the junction in Wilmington with the eastward trains at 7 a.m. and 2:12 p.m. with those to Portland; at 4:12 p.m. to Great Falls only, with a detention of 45 minutes at the junction; and at 11:14 a.m. and 6:12 p.m. to Haverhill only. Leaving the junction in Wilmington, for Lowell, at about 7:14 a.m. on arrival of the morning train from Haverhill; at about 9 a.m. on arrival of the morning trains from Great Falls. At about 11:34 a.m., on arrival of the morning train from Portland. At about 5 p.m. on arrival of the afternoon trains from Haverhill. At about 7:14 p.m., on arrival of the afternoon train from Portland. **WALDO HIGGINSON, Agent**

**PATERSON RAILROAD** Summer Arrangement. Commencing April 20th, 1847, the cars will leave Paterson at New York at 8 o'clock a.m. 9 o'clock a.m. 11 o'clock a.m. 12 1/4 o'clock p.m. 4 o'clock p.m. 5 o'clock p.m. On Sunday, 8 o'clock a.m. 9 o'clock a.m. 4 o'clock p.m. 5 o'clock p.m. Office 75 Courtlandt St.











# PHILADELPHIA AND READING RAILROAD.—Passenger Train Arrangement for 1847.

A Passenger Train will leave Philadelphia and Pottsville daily, except Sundays, at 9 o'clock A. M. The Train from Philadelphia arrives at Reading at 12 18 M.

The Train from Pottsville arrives at Reading at 10 43 A. M.

Fares. Miles. No. 1. No. 2. Between Phila. and Pottsville, 92. \$3.50 and \$3.00.

Between Reading and Pottsville, 34. 1.40 and 1.20.

Five minutes allowed at Reading; and three at other way stations.

Passenger Depot in Philadelphia corner of Broad and Vine streets.

## PHILADELPHIA, WILMINGTON & BALTIMORE RAILROAD.—1847.

Summer Arrangement.

Philadelphia for Baltimore, 8 a.m. and 10 p.m.

Baltimore for Philadelphia, 9 a.m. and 8 p.m.

Connecting with Mail Lines North, South & West.

On Sundays, only the 10 P. M. Line runs.

The Boat Lines, via Newcastle & Frenchtown R.R.

Leave Philadelphia at 3 p.m. No line on Sunday.

Leave Baltimore at 2 p.m. daily.

Accommodation Trains between Philadelphia & Wilmington.

Philadelphia to Wilmington, 8 a.m., 11 a.m., 4 p.m., 7 p.m., 10 p.m. mail.

Wilmington to Philadelphia, 7 a.m., 1 p.m., 4 p.m., 7 p.m., 10 p.m. mail.

J. R. TRIMBLE, Engineer and General Superintendent.

## GEORGIA RAILROAD. FROM AUGUSTA TO ATLANTA—141 MILES.

AND WESTERN AND ATLANTIC RAILROAD FROM ATLANTA TO DALTON—100 MILES.

This Road in connection with the South Carolina Railroad and Western and Atlantic Railroad now forms a continuous line, 408 miles in length, from Charleston to Dalton (Cross Plains) in Murray county, Ga.—32 miles from Chattanooga, Tenn.

## RATES OF FREIGHT.

Between Augusta and Dalton, 27 miles. 408 miles.

1st class. Boxes of Hats, Bonnets, and Furniture, per cubic foot, \$0.18 \$0.23.

2d class. Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs and Confectionary, per 100 lbs. 1.00 1.50.

3d class. Sugar, Coffee, Liquor, Bagging, Rope, Cotton Yarns, Tobacco, Leather Hides, Copper, Tin, Feathers, Sheet Iron, Hollow Ware, Castings, Crockery, etc. 0.60 0.85.

4th class. Flour, Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Geating, Pig Iron, and Grindstones, etc. 0.40 1.10 65.

Cotton, per 100 lbs. 0.45 0.75.

Molasses, per hogshead, 8.50 13.50.

" " barrel, 2.50 4.25.

Salt per bushel, 0.18.

Salt per Liverpool sack, 0.65.

Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows, 0.75 1.50.

German or other emigrants in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Co. will be forwarded free of commissions. Freight payable at Dalton.

F. C. ARMS, Sup't. of Transportation.

Augusta, Ga., July 15, 1847.

## RATES OF FREIGHT.

B. CHANDLER'S Through Transportation Line, between Charleston, S. C., or Savannah, Ga., and Decatur, Ala., and Knoxville, Tenn., and all intermediate points on the Tennessee River.

and Decatur and intermediate points, 1.54 1.54.

and Knoxville and intermediate points, 1.30 1.30.

and Chattanooga, 1.30 1.30.

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